

**IN THE CLAIMS:**

The current claims follow. For claims not marked as amended in this response, any difference in the claims below and the previous state of the claims is unintentional and in the nature of a typographical error.

1.-20. (Canceled)

21. (Currently Amended) A transceiver comprising:

a digital synthesizer;

a phase locked loop coupled to the digital synthesizer;

wherein when the transceiver is in a transmitting mode, the digital synthesizer ~~receives-is~~ configured to receive a modulation signal, ~~modulates-modulate~~ a reference signal in response to the modulation signal, and ~~transmits-transmit~~ the modulated reference signal to the phase locked loop; and

wherein when the transceiver is in a receiving mode, the digital synthesizer ~~receives-is~~ configured to receive a non-modulation signal, ~~generates-generate~~ a non-modulated reference signal, and ~~transmits-transmit~~ the non-modulated reference signal to the phase locked loop.

22. (Currently Amended) The transceiver in accordance with Claim 21 wherein the digital synthesizer and the phase locked loop form a digital synthesizer-driven phase locked loop, and the digital synthesizer driven phase locked loop is configured to operate in a modulating state when the transceiver is in the transmitting mode and is configured to operate in an oscillating state when the transceiver is in the receiving mode.

23. (Currently Amended) The transceiver in accordance with Claim 21 wherein the phase locked loop ~~performs~~ is configured to perform a first filtering performance when the transceiver is in the transmitting mode and ~~performs~~ is configured to perform a second filtering performance different from the first filtering performance when the transceiver is in the receiving mode.

24. (Currently Amended) The transceiver in accordance with Claim 21 wherein the phase locked loop ~~performs~~ is configured to perform a first filtering performance in response to a first control signal and ~~performs~~ is configured to perform a second filtering performance different from the first filtering performance in response to a second control signal.

25. (Currently Amended) A transceiver comprising:

a digital synthesizer;

a phase locked loop;

a modulation signal generator ~~which transmits~~ configured to transmit a modulation signal to the digital synthesizer in response to a first control signal; and

a non-modulation signal generator ~~which transmits~~ configured to transmit a non-modulation signal to the digital synthesizer in response to a second control signal;

wherein in response to receiving the modulation signal, the digital synthesizer ~~modulates~~ is configured to modulate a reference signal by the modulation signal and ~~transmits to transmit~~ the modulated reference signal to the phase locked loop; and

wherein in response to receiving the non-modulation signal, the digital synthesizer ~~generates~~ is configured to generate a non-modulated reference signal and ~~transmits to transmit~~ the non-modulated reference signal to the phase locked loop.

26. (Previously Presented) The transceiver in accordance with Claim 27 wherein the first control signal is generated when the transceiver is in a transmitting mode and the second control signal is generated when the transceiver is in a receiving mode.

27. (Currently Amended) The transceiver in accordance with Claim 26 wherein the digital synthesizer and the phase locked loop form a digital synthesizer-driven phase locked loop, and the digital synthesizer driven phase locked loop is configured to operate in a modulating state when the transceiver is in the transmitting mode and is configured to operate in an oscillating state when the transceiver is in the receiving mode.

28. (Canceled)

29. (Currently Amended) A phase locked loop in accordance with Claim 27 wherein the phase locked loop ~~performs~~ is configured to perform the first filtering in response to a first control signal, and ~~performs~~ is configured to perform the second filtering in response to a second control signal.

30.-31. (Canceled)

32. (Currently Amended) A unit comprising:

a transceiver comprising,

a digital synthesizer, and

a phase locked loop;

wherein when the transceiver is in a transmitting mode, the digital synthesizer ~~receives~~ is configured to receive a modulation signal, ~~modulates~~ modulate a reference signal in response to the modulation signal, and ~~transmits~~ transmit the modulated reference signal to the phase locked loop; and

wherein when the transceiver is in a receiving mode, the digital synthesizer ~~receives~~ is configured to receive a non-modulation signal, ~~generates~~ generate a non-modulated reference signal, and ~~transmits~~ transmit the non-modulated reference signal to the phase locked loop.

33. (Currently Amended) The unit in accordance with Claim 32 wherein the digital synthesizer and the phase locked loop form a digital synthesizer-driven phase locked loop, and the digital synthesizer-driven phase locked loop is configured to operate in a modulating state when the transceiver is in the transmitting mode and is configured to operate in an oscillating state when the transceiver is in the receiving mode.

34. (Previously Presented) A method of transmitting signals, the method comprising:

transmitting a modulation signal to a digital synthesizer of a transceiver when the transceiver is in a transmitting mode;

transmitting a non-modulation signal to the digital synthesizer when the transceiver is in a receiving mode;

in response to receiving the modulation signal, modulating by the digital synthesizer a reference signal by the modulation signal and transmitting the modulated reference signal to a phase locked loop of the transceiver, and

in response to receiving the non-modulation signal, generating by the digital synthesizer a non-modulated reference signal and transmitting the non-modulated reference signal to the phase locked loop.

35. (New) The method in accordance with Claim 34 further comprising:

operating the digital synthesizer and the phase locked loop as a digital synthesizer-driven phase locked loop;

operating the digital synthesizer-driven phase locked loop in a modulating state when the transceiver is in the transmitting mode; and

operating the digital synthesizer-driven phase locked loop in an oscillating state when the transceiver is in the receiving mode.

36. (New) The method in accordance with Claim 35 further comprising:  
performing a first filtering performance using the phase locked loop when the transceiver is in the transmitting mode; and  
performing a second filtering performance different from the first filtering using the phase locked loop when the transceiver is in the receiving mode.

37. (New) The method in accordance with Claim 35 further comprising:  
in response to a first control signal, performing a first filtering performance using the phase locked loop; and  
in response to a second control signal, performing a second filtering performance different from the first filtering performance using the phase locked loop.

38. (New) The method in accordance with Claim 37 wherein the first control signal is generated when the transceiver is in a transmitting mode and the second control signal is generated when the transceiver is in a receiving mode.

39. (New) A method of transmitting signals, the method comprising:

in response to receiving a modulation signal, modulating by a digital synthesizer of a transceiver a reference signal by a modulation signal and transmitting the modulated reference signal to a phase locked loop of the transceiver, and

in response to receiving a non-modulation signal, generating by the digital synthesizer a non-modulated reference signal and transmitting the non-modulated reference signal to the phase locked loop;

wherein the modulation signal is transmitted to the digital synthesizer by a modulation signal generator when the transceiver is in a transmitting mode, and

wherein the non-modulation signal is transmitted to the digital synthesizer by a non-modulation signal generator when the transceiver is in a receiving mode.

40. (New) The method in accordance with Claim 39 further comprising:

operating the digital synthesizer and the phase locked loop as a digital synthesizer-driven phase locked loop;

operating the digital synthesizer-driven phase locked loop in a modulating state when the transceiver is in the transmitting mode; and

operating the digital synthesizer-driven phase locked loop in an oscillating state when the transceiver is in the receiving mode.



41. (New) The method in accordance with Claim 40 further comprising:  
performing a first filtering performance using the phase locked loop when the transceiver is in the transmitting mode; and  
performing a second filtering performance different from the first filtering using the phase locked loop when the transceiver is in the receiving mode.

42. (New) The method in accordance with Claim 40 further comprising:  
in response to a first control signal, performing a first filtering performance using the phase locked loop; and  
in response to a second control signal, performing a second filtering performance different from the first filtering performance using the phase locked loop.

43. (New) The method in accordance with Claim 42 wherein the first control signal is generated when the transceiver is in a transmitting mode and the second control signal is generated when the transceiver is in a receiving mode.

44. (New) A method of transmitting signals, the method comprising:  
  
in response to receiving a first control signal, transmitting a modulation signal to a digital synthesizer of a transceiver; and  
  
in response to receiving a second control signal, transmitting a non-modulation signal to the digital synthesizer;  
  
wherein the first control signal is generated when the transceiver is in a transmitting mode and the second control signal is generated when the transceiver is in a receiving mode.

45. (New) The method in accordance with Claim 44 further comprising:  
  
in response to receiving the first control signal, performing a first filtering performance using the phase locked loop; and  
  
in response to receiving the second control signal, performing a second filtering performance different from the first filtering performance using the phase locked loop.

46. (New) The method in accordance with Claim 44 further comprising:  
  
in response to receiving the modulation signal, modulating by the digital synthesizer a reference signal by the modulation signal and transmitting the modulated reference signal to a phase locked loop of the transceiver, and  
  
in response to receiving a non-modulation signal, generating by the digital synthesizer a non-modulated reference signal and transmitting the non-modulated reference signal to the phase locked loop.

47. (New) The method in accordance with Claim 44 further comprising:
- operating the digital synthesizer and the phase locked loop as a digital synthesizer-driven phase locked loop;
  - operating the digital synthesizer-driven phase locked loop in a modulating state when the transceiver is in the transmitting mode; and
  - operating the digital synthesizer-driven phase locked loop in an oscillating state when the transceiver is in the receiving mode.